# MONTHLY WEATHER REVIEW.

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## INTRODUCTION.

The general meteorological conditions which prevailed over the United States during December, 1883, as compiled from the reports from the regular and voluntary observers of the Signal Service, and from the monthly reports of state weather services, are shown in this REVIEW. Descriptions of the storms occurring over the north Atlantic ocean are also given under "north Atlantic storms." On chart ii. are shown the approximate paths of the centres of ten storms which occurred over the north Atlantic during December.

The month was warmer than the average December over nearly the whole of the United States, the exceptions being the extreme northwest, upper lake region, New England, and the northern and middle Pacific coast regions, where it was colder than usual.

Large deficiencies in the average precipitation occurred in the states bordering on the south Atlantic coast, in the northern plateau, and in the north and middle Pacific coast regions; and a large excess occurred in the southern plateau. In other portions of the country the departures of excess and deficiency were not marked.

Eighteen atmospheric depressions, occurring within the limits of the stations of observation, are described under "areas of low barometer." The paths of the centres of fifteen of these are shown on chart i.

The phenomenal sunsets which were so extensively observed during the preceding months continued during December. Under "miscellaneous phenomena" will be found a summary of the reports relating thereto, that have been forwarded by the observers of the Signal Service.

In the preparation of this REVIEW the following data, received up to January 20th, 1884, have been used, viz.: the regular tri-daily weather-charts, containing data of simultaneous observations taken at one hundred and twenty-two Signal Service stations and fifteen Canadian stations, as telegraphed to this office; one hundred and fifty-six monthly journals, and one hundred and forty monthly means from the former, and fifteen monthly means from the latter; two hundred and sixty-three monthly registers from voluntary observers; forty-nine monthly registers from United States Army post surgeons; marine records; international simultaneous observations; marine reports, through the co-operation of the "New York Herald Weather Service;" abstracts of ships' logs, furnished by the publishers of "The New York Maritime Register;" monthly weather reports from the local weather services of Indiana, Kansas, Nebraska, Ohio, and Tennessee, and of the Central Pacific railway company; trustworthy newspaper extracts; and special reports.

## ATMOSPHERIC PRESSURE.

*[Expressed in inches and hundredths.]*

The distribution of mean atmospheric pressure for December, 1883, determined from the tri-daily telegraphic observations of the Signal Service, is shown by the isobarometric lines on chart iii. The highest, inclosed by the isobar of 30.25, covers portions of the northern, middle, and southern slopes, and middle plateau. The highest barometric means occurring within those regions are, 30.28 at Salt Lake City, Utah, and 30.27 at Cheyenne, Wyoming, North Platte, Nebraska, and Fort Elliott, Texas. An isobar of 30.2 incloses the northern and middle plateau districts and the eastern Rocky mountain slope. Westward of this area of barometric maximum the mean pressures decrease to 30.06 on the north Pacific coast and to 30.07 in southern California. To the eastward of the area of greatest pressure the barometric means fall below 30.15 on the Texas coast, and below 29.95 over the Canadian maritime provinces, while over northern Georgia, western South Carolina, and southeastern Tennessee, the mean pressures exceed 30.2. An isobar of 30.1 is traced from Lake Superior southward to northern Illinois, and thence eastward to the New England coast. North of this isobar the pressures vary in the lake region from 30.02 to 30.1, and in the Canadian maritime provinces and New England from 29.92 to 30.03. The stations reporting the extremes for the entire country are: lowest, Sydney, Nova Scotia, 29.92; highest, Salt Lake City, Utah, 30.28.

Compared with the mean pressure of the preceding month (November), an increase has taken place in the Saint Lawrence valley, upper lake region, and, with a few exceptions, at all stations west of the Mississippi river. The greatest increase occurred in the upper Missouri valley and extreme northwest, where it varies from .15 to .19. In the Canadian maritime provinces, New England, and the districts east of the Mississippi south of the lake region, except in Florida, the mean pressures are lower than for November, the departures being most marked from northern Georgia to southern New Jersey, where they amount to .05. At Key West, Florida, the monthly mean is .07 higher than that for November.

### DEPARTURES FROM THE NORMAL VALUES FOR THE MONTH.

Compared with the normal pressure for December, no marked departures have occurred, except on the north Pacific coast, where they range from .07 to .10 above the normal. In the extreme northwest, south Atlantic states, middle Pacific coast, over the eastern Rocky mountain slope, and the western plateau districts the mean pressure is slightly above the normal, the departures varying from .01 to .06. From the Missouri valley eastward to the New England and middle Atlantic coasts, and in southern California, the mean pressure is slightly below the normal, the departures ranging from .01 to .04.

### BAROMETRIC RANGES.

The barometric ranges were greatest in New England, where they were unusually large. At Eastport, Maine, the monthly range was 1.86, which, with the exception of 1.90 at Fort Myer, Virginia, in 1878, is the largest that has been reported for December since 1877. The monthly ranges exceeded 1.25 at the most northerly stations from Minnesota westward to